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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,561	12/17/2003	Tomoyuki Ohzeki	FS-F03218-01	4508
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TAIYO CORPORATION			CHEA, THORL	
401 HOLLAND LANE				
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ALEXANDRIA, VA 22314			1752	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,561

Applicant(s)

OHZEKI ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the communication submitted on September 5, 2006; claims 1, 4-8, 10-20 are pending in this instant application and claims 2-3, 9 have been canceled.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 4-8, 10-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed fails to provide the amount range of the silver iodide complex from 1 to 300 mole % relative to an amount of the silver halide in claim 1.

The specification on page 67 discloses the silver iodide complex forming agent preferably in a range from 1 mol % to 5000 mol%, more preferably from 10 mol% to 1000 mol%, and still more preferably from 50 mol % to 300 mol%. There is no range from 1 mole % to 300 mole % presented therein. Therefore, the range as claimed is considered as new range that was not presented in the specification as originally and therefore, the new range raises the issue of new matter.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1, 4-8, 10-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claiming of "wherein a silver iodide content in the photosensitive silver halide is in the range from 90 mole % to 100 mole %; the photosensitive silver halide in the form of tabular grains having an average sphere-equivalent diameter in the range from 0.3 micron to 5.0 micron" is unclear whether it is intended to claim silver halide tabular grains having silver iodide from 90 mole % to 100 mole % and having an average sphere-equivalent diameter in the range from 0.3 micron to 5.0 micron" or it is intended to claim two type of silver halides, first type, the silver iodide content in a range from 90 mole % to 100 mole %, and the second type, the silver halide is in the form of silver halide grain an average sphere-equivalent diameter in the range from 0.3 micron to 5.0 micron.". The claimed language appears to be awkward and confusing.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 7, 10, 14-17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shor et al (US Patent No. 6,413,710), Siga et al (US Patent 4,332,889) and Matsumto et al (US Patent No. 5,958,668).

See Shor et al as a whole especially the disclosure of silver halide in column 14, which discloses the silver halide grains having cubic or tabular morphology; the size of the grains in

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column 14 lines 21-29; the silver halide includes silver bromide, silver iodide, silver chloride, silver iodobromide, silver chlorobromiodide, silver chlorobromide and the average is from 0.01 micron to 1.5 microns, and the average size of the silver halide grains is expressed in term by the average diameter if the grains are spherical, and by the average of the diameter of equivalent circles for the projected image if the grains are cubic or in other non-spherical shape in lines 9-20 and 43-60; the average diameter of the photosensitive silver halide is up to several micrometer depending on their desired used in lines 43-45; the preparation of silver halide grains that have been formed in presence of a hydroxyltetrazidene or an N-heterocyclic compound comprising mercapto group in abstract and column 10-12; the sulfur-containing chemical sensitizing compound having thiourea ligand in column 17, compounds (IV) to (VI); and the photothermographic material can be used in application such as digital imaging, and industrial radiography in column 6, lines 36-53.

Siga et al (US 4,332,889) disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to

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silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5.” Matsumoto et al (US Patent No. 5,958,668) discloses the use of the amount of antifoggant an amount of 10 mole % to 40 mole % based on organic silver salt in the abstract and the antifoggant includes the mercapto compounds shown in column 13-14 and the nitrogen containing compound in column 15-16. These compound is within the scope of the silver iodide complex agent shown in the present specification disclosure on page 54 or the formula (I) and (2) in claim 7.

Shor et al disclose the photothermographic material substantially as claimed, except failing to exemplified the silver halide having silver halide content from 90 mol % to 100 mol %, but suggest the use of silver iodide among the other known silver halide such as silver bromide, silver chloride, silver iodobromide, silver chlorobromiodide, and silver chlorobromide having the average sphere-equivalent diameter within the scope of 0.1 micron to 1.5 micron within the range from 0.3 micron to 5.0 micron, the dimension of the silver halide presented in the claims. Moreover, Shor et al disclose compound containing nitrogen atom and sulfur atom as chemical sensitizer. These chemical sensitizers are disclosed in the present specification disclosure as “silver iodide complex forming agent”. See for instance mercapto compound and the compound having thiourea ligand on pages 54 and 62 of the specification disclosure. Therefore, the silver iodide complex forming agent have been conventionally known in the art as chemical sensitizer or antifoggant for photothermographic material. Shor et al my not exemplified the use of silver iodide or the silver halide having iodide in the range from 90 mole % to 100 % presented in the claimed invention. However, the selection of the silver halide such as silver iodide or silver halide containing high silver iodide would have been known in the art due the teaching of Siga et al that the silver iodide or silver halide having silver iodide and silver bromide with molar

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ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5 provide a photothermographic material with stability of the raw image forming material. Therefore, it would have been obvious to the worker of ordinary skill in the art to use silver iodide suggested in Shor et al or the silver halide having silver iodide and silver bromide with molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5 taught in Siga et al in the material of Shor et al to provide a photothermographic material with stability of the raw image forming material, and thereby provide a material as claimed. The amount of silver iodide complex forming agent is known and taught in Matsumoto et al, and it would have been obvious to use the known amount in Matsumoto et al as stabilizer for the material taught and Shor et al, and thereby provide a material as claimed. The toning agent such as phthalic acid or phthalazine disclosed in column 28, lines 1-34 have been known as development accelerator.

8. Claims 4-6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shor et al (US Patent No. 6,413,710) and Siga et al (US Patent 4,332,889) as applied to claims 1, 7, 10, 16-17, 19-20 above, and further in view of Makasky et al (US Patent No. 4,459,353).

Shor et al disclose the silver halide including silver iodide wherein the cubic or tabular morphology are preferred, but fails to disclose the aspect ration thereof or the silver halide tabular grains having a dislocation associated therewith. Maskasky discloses a thin tabular silver iodide having a high average aspect ratio of greater than 8:1 and account at least 50 percent of the total projected area of the silver halide grains presented in the emulsion. The sensitizing silver salt is deposit onto the host tabular grains at selected sites can be generally chosen among

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silver salt capable of being epitaxially grown on silver halide including silver chloride is disclosed in column 10, lines 1-37. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known silver iodide tabular known in the art such as taught in Makasky in the material taught in Shor et al with an expectation of achieving a useful material.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable Simpson et al in view of Siga et al as applied to claims 1, 7, 10, 16-17, 19-20 above, and further in view of Tsuzuki et al (US Patent No. 6,093,529). Tsuzuki discloses the use of uv absorber in a photothermographic material to prevent its photographic properties from deteriorating. See column 3, lines 19-35. . It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the uv dye and the silver halide with high iodide content taught in Tsuzuki et al in the material of to Shor et al prevent its photographic properties from deteriorating, and thereby provide a material as claimed.

10. Claims 7, 17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shor et al in view of Siga et al as applied to claims 1, 4-5, 10, 14-15, 17, 19-20 above, and further in view of Zou et al (US Patent No. 6,576,410).

Zou et al a X-ray photothermographic material wherein both side of a support are provided with imaging layer; the use X-ray intensifying screen to expose the material and a compound having structure within the scope of claim 7. See abstract, compound in columns 28-37, T-1 to T-59; and column 14, compound RS-1 and column 15, RS-1a, RS-1b. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the toner taught and sensitizer to improve the toning property in combination with the coating of the imaging

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layer on both side of the support to form an X-ray photothermographic material in the use of X-ray intensifying screen, and thereby provide a material as claimed.

11. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shor et al in view of Siga et al as applied to claims 1, 7, 10, 14-17, 19-20 above, and further in view of Goto et al (US Patent No. 6,787,298) and Okada et al (US Patent No. 6,120,983). The compound of formula (I) in claim 12 and claim 13 has been known in Goto et al and Okada et al. See compound in columns 27-52, compound I-58, and column 13, lines 1-45. These compound provide a photothermographic material with higher sensitivity. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the compound taught in Goto et al and Okada et al to increase the sensitivity of the material Shor et al, and thereby provide a material as claimed.

Response to Arguments

12. Applicant's arguments filed September 5, 2006 have been fully considered but they are not persuasive because of rejections above.

The applicants argue that: "From the description in column 14, line 61 to column 15, line 2 of Shor it is understood that the "average particle size" described in Shor is a circle-equivalent diameter measured by a projected area method which is different from the sphere-equivalent diameter used in the present invention. Since the measurement method for the average circle-equivalent diameter and that of the average sphere-equivalent diameter are different, and the measured values thereof may also be different depending on the shape of measured particles, it is impossible to directly see a correspondence between the values of the circle-equivalent diameter and the sphere-equivalent diameter. Accordingly, it cannot be deemed that Shor teaches

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the photosensitive silver halide having the sphere-equivalent diameter as claimed in the present invention.”.

Shor et al may not use the mean of measuring the size of the silver halide grain in term of circle-equivalent diameter such as being presented in the applicants' argument, but Shor discloses the silver halide grains having grain size wherein the average diameter of up to several micron. Therefore, the silver halide grains taught in Shor have include the silver halide having a range from a small to large grain size, and would have expected to have its volume encompasses the volume of the grain used in the present claimed invention, and accordingly, have similar circle-equivalent diameter.

The applicants further argue Shor fails to teach or suggest that the photosensitive silver halide has a tabular shape and a silver iodide content of 90 mol % to 100 mol % of silver iodide; and “Shor includes no disclosure or suggestion regarding the photothermographic material having image forming layer on both sides of the support and being capable of being exposed imagewise by using X-ray intensifying screen, and by having the specific silver iodide content in the image-forming layers of the specific configuration, the unexpected effects of the present invention of improved haze after thermal development, improved printout (image stability), and high sensitivity obtained by suppressing D_{min} (fogging) to a low degree can be obtained”.

The argument is not persuasive. Shor discloses silver halide including silver halide tabular grains and the use of silver iodide, which encompasses the scope of silver halide having 100 mole % silver iodide, presented in the claimed invention. Shor et al discloses the photothermographic material useful in industrial radiography in column 6, lines 36-53, and it would understood that material used in industrial radiology having on both sides of support

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coated with image forming layer. This type of material have been commonly known in industrial radiology art. The amount of silver iodide complex forming agent would have been obvious over the teaching of Matsumoto et al which discloses the amount of antifoggant is an amount of 10 mole % to 40 mole % based on organic silver salt. This amount may not express in term of the amount relative to silver halide from 1 to 300 mole %, but based on organic silver salt. However, the amount of silver halide in the photothermographic material is considered relatively small relative to the amount of organic silver salt. Therefore, the amount as claimed would encompass the amount relative to silver halide claimed in the present claimed invention.

The comparative results shown in the Declaration under 37 CFR 1.132 on September 5, 2006 have been considered, but fail to overcome the prima facie case of rejection set forth above. First, the composition of the silver halide in the Declaration is unclear. See samples 3-8, 10-11, 14-15 wherein the silver halide contains silver iodide of less than 100 mole %. The type of silver halide grains are not specifically stated therein, i.e., silver bromiodide, silver chloriodide, silver bromchloriodide or else. The Declaration appears to be silent with respect to the halide other than iodide. Therefore, the Declaration is not clearly understood.

The Declaration is not commensurate with the scope of the claimed invention. The samples are made accordingly to Example 1 of the specification disclosure which related to the use of silver behenate as silver source, the bisphenols reducing agent and the hydrogen bonding-type compound, polyhalogenate compound, and the silver iodide complex forming agent F-444, while the scope of the claims contains any type silver salt of an organic acid, reducing agent and silver iodide complex forming agent. The silver behenate, bisphenols reducing agent and the phthalazine compound are most preferred compound in the photothermographic art. The

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phthalazine compound is a toning agent used to improve the color tone. Therefore, the scope of the claims are so broad that the Declaration is not commensurate with the scope thereof. " The data is not reasonably commensurate in scope with the claims, which, as drafted, are broad in scope and cover mixtures of numerous untested compounds. Lindner, 457 F. 2d at 508, 173 USPQ at 358."

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tcheatln
2006-11-20


Thorl Chea
Primary Examiner
Art Unit 1752